

PROPOSAL EVALUATION

Proposition 84 Integrated Regional Water Management (IRWM) Grant Program

Implementation Grant, Round 1, FY 2010-2011

Applicant	Contra Costa Water District	Amount Requested	\$12,660,000
Proposal Title	East Contra Costa County Prop 84 Round 1 Implementation Grant Application	Total Proposal Cost	\$33,960,600

PROPOSAL SUMMARY

Eight projects are included in the proposal: (1) East County Water Conservation Program, (2) East County Water Meter Installation Program, (3) Bentwood Non-Potable Water Supply Project, (4) Pittsburg Recycled Water Pipeline Rehabilitation Project, (5) Phase 2 Contra Costa Canal Levee Elimination and Flood Protection Project, (6) Drainage Area 55 - West Antioch Creek Chanel Improvements, (7) Upper Sand Creek Basin, and (8) Watershed Protection and Restoration.

PROPOSAL SCORE

Criteria	Score/ Points Possible	Criteria	Score/ Points Possible
Work Plan	9/15	Economic Analysis – Water Supply Costs and Benefits	9/15
Budget	3/5	Water Quality and Other Expected Benefits	6/15
Schedule	5/5	Economic Analysis – Flood Damage Reduction	9/15
Monitoring, Assessment, and Performance Measures	3/5	Program Preferences	8/10
Total Score (max. possible = 85)			52

EVALUATION SUMMARY

The following is a review summary of the applicant's proposal.

Work Plan

The proposal did not fully address the criterion and had insufficient supporting documentation. The Proposal identifies three goals and objectives. One of them is advancing the objectives of the IRWM Planning. A table is provided that outlines the IRWM Planning objectives and lists the projects that will help meet them. The work plan describes the linkages for four of the eight projects to projects/programs outside of the proposal. Most proposed tasks contained little detail regarding the task description or deliverables. For example, Task 4D.2 describes one of its "specific construction activities" to be "On-site construction activities needed to rehabilitate the pipeline including ancillary work to complete the project." This leaves a great deal of ambiguity as to what those activities will be. Furthermore, supporting documentation was only provided for Projects 5, 6, and 7. While the proposal claims that the projects are ready to be

implemented, there are elements included in tasks of several projects. For example, Task 7E, other than stating that there is a habitat goal as part of this project, it is not clear what is to be accomplished by this restoration element or why it is included in this project.

Budget

The budgets for most of the projects in the proposal have detailed cost information, however, not all of the costs appear to be reasonable and supporting documentation is lacking. For example, in Project 4, a lump sum of \$75k is requested for environmental mitigation, but supporting documentation to validate the reasonableness for this cost is not provided. In addition, this activity was not included in the work plan. Also, in Project 5, the majority of the construction cost estimates are lump sum items, again with no supporting documentation to validate the reasonableness of this cost. In Project 6, there is no documentation to support the design costs (estimated at just over \$0.5 million), just a lump sum expense – same estimate was included in the supporting memo, but no documentation to support this cost was provided there either. Some of the cost estimates are justified with documentation for the design and sometimes the construction, but none of the projects have a fully supported budget.

Schedule

The criterion is fully addressed as the applicant has presented a detailed and specific schedule for each project. In addition, each schedule is consistent with work plan and budget. The proposal demonstrates readiness to begin construction or implementation of at least one project of the Proposal no later than six months (December 1, 2011) after the anticipated award date (June, 1, 2011). With regard to readiness to begin construction/implementation, Projects 1 through 5 are scheduled to begin construction prior to 12/1/2011.

Monitoring, Assessment, and Performance Measures

The criterion is less than fully addressed, and documentation and rationale are insufficient. For example, Project 1 has a targeted amount of water saved and the monitoring plan is to measure the amount of water used in each household. Since there is no indication that the project includes baseline monitoring, it is not likely that the applicant will be able to monitor the water savings. Projects 6 and 7 address flooding but water quality improvements are also claimed. If there is a water quality problem, then the projects should include water quality monitoring of the identified pollutants. Similar to Projects 6 and 7, water quality monitoring should also be included for Project 8.

Economic Analysis – Water Supply Costs and Benefits

Above average levels of water supply benefits can be realized through this proposal; however, the quality of the analysis was moderate and supporting documentation was partially substantiated. Some benefits were well described and reasonable, but others needed better documentation. Reviewer believes that one benefit was substantially overestimated, as described below. Based on reviewer's evaluation/analysis, present value (PV) of water supply benefits totals no more than \$13.3 million (M). Additional questions remain about the source and plausibility of some assumptions in the analysis.

Project 1 PV of costs is \$3.0 M, and undiscounted capital cost matches the value in Table 7. Three components are included avoided Contra Costa Water District (CCWD) purchases by Diablo Water District (DWD) (68 acre-feet per year (AFY)), avoided groundwater pumping by DWD (14 AFY), and avoided CCWD purchases by Brentwood (up to 1,050 AFY). Quantified savings are based on the design performance of

HET's, and on ET controller pilot program results. The avoided CCWD purchase cost is about \$800 per AF and includes CCWD's fixed component. Analysis should only count the variable cost avoided, or justify why the full cost should be included. The avoided groundwater pumping and treatment cost is \$172 per AF (unclear whether the treatment cost is just variable cost portion). PV of benefits claimed is \$5.99 M.

Project 2 PV of costs is \$0.67 M. Costs are shown in 2009 \$ and capital cost matches that shown in Table 7. Quantified WS benefit is the avoided purchase of Delta water from CCWD at \$537 per AF and some avoided groundwater pumping at \$172 per AF. (It is unclear to the reviewer why this project used the raw water rate while the first project used the treated water rate.) Savings assume 20% reduction in use in both residences and the landscapes receiving meters. PV of benefits is \$0.85 M. Good discussion of other benefits, beneficiaries, and timing.

Project 3 PV of costs is \$1.76 M, and undiscounted capital cost matches the value in Table 7. Benefits are quantified as the avoided water charge for the replaced potable water use (\$3.35 per thousand gallons, equivalent to \$1,159 per AF) plus the avoided fixed monthly meter charge of \$18. Meter charge covers fixed costs that would not actually be avoided by the region (it is a transfer payment from the customer to the supplier – reviewer made this minor adjustment to benefits). PV of the quantified benefits is \$1.27 M.

Project 4 PV of cost is \$1.28 M. Cost table appears properly constructed and capital cost matches the value on Table 7. Benefits are quantified assuming the old pipe would fail in 2022. The analysis should have considered increasing probability of failure over time. This simplistic assumption over-estimates benefits (especially if money is spent to repair and rehab the existing pipe, as is also considered an avoided cost). Further, the applicant's analysis continues the lost benefits from pipe failure for the remaining time horizon of the project. Reviewer thinks the real alternative is to wait until the old pipe fails and then replace – leading to perhaps three years of outage, not the entire time horizon from 2022-2062. The avoided water charge for the replaced potable water use is \$2.82 per thousand gallons, equivalent to \$919 per AF plus the avoided fixed monthly meter charge. Meter charge covers fixed costs that would not actually be avoided by the region (it is a transfer payment from the customer to the supplier). Applicant claims that PV of the quantified benefits is \$4.73 M. This appears to be a significant over-estimate, and recalculated the benefits using three years of outage at the time of failure, resulting in a revised benefit of \$1.44 M in PV.

Phase 5 benefits are estimated as a proportion of the total project benefits, as this project is the second phase of a larger project, apportioned using the Phase 2 cost as a fraction of the whole. Good description of without-project condition. Cost table appears properly constructed and capital cost matches the value on Table 7. Benefits are quantified as the avoided water quality releases from the State Water Project (SWP) and Central Valley Project (CVP) reservoirs, value of water in emergency storage, and avoided loss in water revenue from an outage. PV of the claimed quantified benefits is \$1.784 M. A number of the physical benefits are not clearly referenced. For example, the claim that the project will avoid the release and loss of 3,950 AF of SWP/CVP water is not documented. Lost water sales are not an appropriate way to estimate benefits of an avoided outage. Applicant needs to provide supportable estimate of likely length of outage, the ability to backfill from other sources, and the remaining shortages imposed on customers.

Project 8 PV of costs is \$1.61 M, and undiscounted capital cost matches the value in Table 7. Quantified benefit is the project's share of the total benefit to completing the HCP projects (share of benefits is set equal to the share of total HCP cost, or 1%). Unit value of benefit is based on an estimate of the alternative cost of acquiring or developing an equivalent water supply, assumed to be \$500 per AF. Annual benefit in 2009 \$ is 1% of 47,000 times \$500 per AF. PV of benefits claimed is \$1.99 M. Estimates appear reasonable.

Water Quality and Other Expected Benefits

Only below average level of water quality and other benefits can be realized through this proposal. The quality of the analysis was moderate and supporting documentation was partially substantiated. Water quality benefits are described reasonably well, though quantified benefits are relatively small (\$2.14 M in PV) relative to total proposal cost.

Project 1 has good description of benefits including avoided contamination due to leaks, reduced contaminated runoff or erosion from landscape irrigation, and reduced Carbon Dioxide (CO₂) emissions (about 2,000 metric tons) from pumping, treating, and delivering the avoided water use. This project includes benefits of reduced Delta diversion, and reduced CO₂ emissions (about 213 metric tons) from pumping, treating, and delivering the avoided water use. These are not quantified in \$.

Project 3 benefits include reduced fertilizer use (small value of \$.005 M per year), and reduced CO₂ emissions (about 8 metric tons per year) from pumping, treating, and delivering the avoided water use. PV is \$.065 M.

Project 4 benefits include avoided repair costs for existing pipe (\$.028 M in PV), reduced fertilizer use (small value of \$.02 M in PV), and reduced CO₂ emissions (about 1,870 metric tons over the life) from pumping, treating, and delivering the avoided water use.

Three projects (6, 7, and 8) have a qualitative description of benefits, primarily surface runoff water quality and habitat benefits. The last of these also discusses property value increases and avoided permit costs, but those are not true economic benefits to the region or state.

Economic Analysis – Flood Damage Reduction

Above average levels of flood damage reduction benefits can be realized through this proposal; however, the quality of the analysis was partially lacking and supporting documentation was partially unsubstantiated. Reviewer is unable to locate reliable source for many of the assumptions and unable to duplicate the Flood Rapid Assessment Model (FRAM) analysis with the assumptions provided.

Project 5 benefits are quantified, but applicant states that no study or detailed estimates are available for historical flood damages or the value of properties potentially affected. Therefore, the analysis is deemed illustrative of qualitative benefits, and has removed it from the quantified benefits.

Project 6 benefits are quantified using FRAM, and applicant describes the input data used. There is no formal flood risk assessment study cited, but rather data is drawn from a combination of records from a lawsuit (provided), discussions with Antioch city staff, and assumptions. DWR is unable to produce the same benefit estimate using FRAM, and notes that the results described in the text (page 9-14) do not match the numbers in Table 19. DWR's estimate of PV of avoided damages is \$2.95 M, rather than \$8.4 M (important note: DWR reconstructed the analysis based on the information provided in the text).

Project 7 benefits are quantified using FRAM, and applicant describes the input data used. There is no formal flood risk assessment study cited, but rather analytical assumptions are developed based on discussions with "regional experts" (pg 9-21). DWR is unable to produce the same benefit estimate using FRAM. DWR's estimate of PV of avoided damages is \$22.04 M, rather than \$27.9 M (important note: DWR reconstructed the analysis based on the information provided in the text).

Program Preferences

There is a high level of certainty that the Proposal collectively will implement multiple Program Preferences, including long term drought preparedness within the region. Disadvantaged Communities (DACs) have been identified and documented in the application. A few of the proposed projects may provide ancillary benefits to DACs, but none address a critical water supply or water quality need. According to the proposal, eight projects will collectively implement seven Program Preferences including: Include regional projects or programs, Effectively integrate water management programs and projects within hydrologic region, Contribute to attainment of one or more of the objectives of the CALFED Bay-Delta Program, Drought preparedness, Use and reuse water more efficiently, Expand environmental stewardship, and Practice integrated flood management.